UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/750,144	12/31/2003	Allan Robert Knoll	1014-SP230	7932

34456 7590 07/05/2007

LARSON NEWMAN ABEL POLANSKY & WHITE, LLP
5914 WEST COURTYARD DRIVE
SUITE 200
AUSTIN, TX 78730

EXAMINER	
NORRIS, JEREMY C	

ART UNIT	PAPER NUMBER
2841	

MAIL DATE	DELIVERY MODE
07/05/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

H·A

Office Action Summary	Application No.	Applicant(s)	
	10/750,144	KNOLL ET AL.	
	Examiner	Art Unit	
	Jeremy C. Norris	2841	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 March 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-7,9-12,14-18,20-32 and 43* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) *1,3-7,9-12,14-18,20-32 and 43* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *14 September 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 9-11, and 26-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 1-107582 (Haraichi) in view of US 2004/0266628 A1 (Lee).

Haraichi discloses, referring primarily to figure 3, a superconducting article, comprising; a substrate (3) having a width and a longitudinal direction, wherein the length is greater than the width and the longitudinal direction extends along the length; and a layer of superconductor material overlying the substrate, said layer of superconductor material overlying the substrate, said layer comprising a plurality of superconductor strips (1) and at least one superconductive bridge (7) coplanar with the plurality of superconductive strips, wherein (i) the plurality of superconductor strips extend along a longitudinal direction, the superconductor strips comprising first and second superconductor strips extending parallel to each other along the longitudinal direction, being coextensive with each other along at least a portion of the length and being spaced apart from each other along the width by a gap having a length extending parallel to the longitudinal direction; and the at least one superconductive bridge electrically connecting at least the first and second superconductor strips with each other and spanning the gap. Haraichi does not specifically state that the substrate has a dimension ratio of not less than about 10 [claim 1]. However, it is well known in the art to form substrates under superconducting strips with a dimension ratio of not less than about 10 as evidenced by Lee ([0030]). Therefore, it would have been obvious to one having ordinary skill in the art at the time of invention to form the substrate has a dimension ratio of not less than about 10 (or alternately 100 [claim 26] or 1000 [claim 27]). The motivation for doing so would have been to properly support the superconductor strips. Additionally, the modified invention of Haraichi teaches wherein

the article is in the form of a superconducting tape [claim 28], wherein the entirety of the bridge connecting the superconducting strips is superconductive [claim 43].

Regarding claims 9-11, these claims cite process limitations in a device claim and thus are only considered to the extent to which the process impacts the structure of the device. Moreover, it is well settled that even though product by process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product by process claim is the same as or obvious from a product of the prior art, the claims unpatentable even though the prior product was mad by a different process. *In re Thorpe*, 77 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir 1985).

Claims 3-7, 12, 14-18, 20-25, and 29-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haraichi in view of Lee as applied to claim 1 above, and further in view of US 5,077,266 (Takagi).

Regarding claims 3-5 and 7, the modified invention of Haraichi teaches the claimed invention as described above except modified Haraichi does not specifically teach, wherein the superconductor strips are spaced apart from each other by an average gap width of at least 1 μm [claim 3], wherein said average gap width is not less than about 5 μm [claim 4], wherein the superconductor strips are spaced apart from each other by a substantially constant gap [claim 5], wherein the first and second superconductor strips have substantially the same width [claim 7]. However, it is well

known in the art, as evidenced by Takagi to form a set of superconductive strips having an average gap width of at least 1 μm (col. 8, lines 35-40), wherein said average gap width is not less than about 5 μm (col. 8, lines 35-40), wherein the superconductor strips are spaced apart from each other by a substantially constant gap (col. 8, lines 35-40), wherein the first and second superconductor strips have substantially the same width (col. 8, lines 35-40). Therefore, it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to form the superconductive strips in the modified invention of Harachi with the claimed dimensions as is known in the art and evidenced by Takagi. The motivation for doing so would have been to insulate the strips from one another while supplying strips each capable of carrying the same amount of current.

Regarding claim 6, the modified invention of Haraichi teaches the claimed invention as described above except modified Haraichi does not specifically teach wherein the first and second superconductor strips have an average width of at least 5μm (col. 8, lines 35-40) [claim 6]. However, as evidenced by Takagi, it is well known in the art to form first and second superconductor strips with an average width of at least 5μm (col. 8, lines 35-40). Therefore, it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to use these dimensions in the modified invention of Haraichi as is known in the art and evidenced by Takagi. The motivation for doing so would have been to supply superconductor strips capable of carrying certain amounts of current.

Regarding claims 12 and 14-18, the modified invention of Haraichi does not specifically teach a plurality of superconductive bridges. However, as evidenced by Takagi, it is well known in the art to form a plurality of superconductive bridges (72) [claim 12], wherein the conductive bridges are spaced apart generally periodically along a length of the substrate [claim 14], wherein the article comprises a minimum of one bridge per 100m of substrate (col. 8, lines 30-55) [claim 15], wherein the article comprises a minimum of one bridge per 50m of substrate (col. 8, lines 30-55) [claim 16] wherein the article comprises a minimum of one bridge per 10m of substrate (col. 8, lines 30-55) [claim 17] wherein the article comprises a minimum of one bridge per 1m of substrate (col. 8, lines 30-55) [claim 18]. Therefore, it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to form the superconductive bridge of modified Haraichi in each of these forms as is known in the art and evidenced by Takagi. The motivation for doing so would have been to ensure constant current distribution.

Regarding claims 20-25, modified Haraichi teaches the claimed invention as described above except modified Haraichi does not specifically teach further comprising at least one conductive shunt layer overlying the superconductor layer [claim 20], further comprising at least a biaxially textured layer, over which the superconductor layer is provided [claim 21], wherein the biaxially textured layer comprises an IBAD layer [claim 22], wherein the layer of superconductor material is comprised of a high temperature superconductor [claim 23]. However, it is well known in the art as evidenced by Takagi to supply at least one conductive shunt layer overlying the

superconductor layer (col. 8, lines 30-55), further comprising at least a biaxially textured layer, over which the superconductor layer is provided (col. 8, lines 30-45), wherein the biaxially textured layer comprises an IBAD layer (col. 8, lines 30-50), wherein the layer of superconductor material is comprised of a high temperature superconductor (col. 8, lines 1-15). Therefore, it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to add such a layer to the modified invention of Haraichi as is known in the art and evidenced by Takagi. The motivation for doing so would have been to control the magnetic flux (Takagi col. 8, lines 30-45). Similarly, as taught by Takagi, it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to form the high temperature superconductor to comprise $REBa_2Cu_3O_{7-x}$, wherein RE is a rare earth element (col. 8, lines 1-15) [claim 24], wherein the superconductor material comprises $YBa_2Cu_3O_7$ (col. 8, lines 1-15) [claim 25] in the invention of Haraichi. The motivation for doing so would have been to use a commonly available high temperature superconductive material. Moreover, it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin,* 125 USPQ 416.

Regarding claims 29-32, the modified invention of Haraichi does not specifically teach the application of the device. However, Takagi teaches wherein the substrate, the superconductive strips, and the conductive bridges form a superconductive tape, the article comprising a coil having a plurality of superconductive tapes (col. 8, lines 30-55) [claim 29], wherein the article is a power transformer, the power transformer comprising

at least a primary winding and a secondary winding, wherein at least one of the primary winding and secondary winding comprises a wound coil of superconductive tape, the superconductive tape comprising said substrate, said superconductor strips, and said conductive bridges (col. 8, lines 30-55) [claim 30], wherein the article is a rotating machine, the rotating machine comprising at least one winding, wherein the at least one winding comprises a superconductive tape formed of said substrate, said superconductor strips, and said conductive bridges (col. 8, lines 30-55) [claim 31], wherein the rotating machine is a power generator or motor (col. 8, lines 30-55) [claim 32]. Therefore, it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to use the modified device of Haraichi in the applications taught by Takagi. The motivation for doing so would have been to allow flexibility to application of the device.

Response to Arguments

Applicant's arguments with respect to claims 1, 3-7, 9-12, 14-18, 20-32, and 43 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

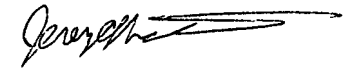
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeremy C. Norris whose telephone number is 571-272-1932. The examiner can normally be reached on Monday - Friday, 9:30 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dean Reichard can be reached on 571-272-1984. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Jeremy C. Norris

Patent Examiner - Technology
Center 2800
Art Unit 2841

JCSN